Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Long-stay nursing home care: percent of residents whose need for help with activities of daily living has increased.

Source(s)

RTI International. MDS 3.0 quality measures user's manual, v9.0. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2015 Oct 1. 80 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Outcome

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percent of long-stay residents whose need for help with late-loss activities of daily living (ADLs) has increased when compared to the prior assessment.

Rationale

Increasing activities of daily living (ADL) dependence is associated with decreased quality of life. Greater functional dependency was found to be a risk factor for complications such as pressure ulcers, hospitalizations, and reduced quality of life (Centers for Medicare and Medicaid Services [CMS], n.d.; Colorado Foundation for Medical Care, 2007). Although some ADL decline may be an unavoidable consequence of an individual's clinical condition, increased functional dependency can also result from inadequate nursing care or rehabilitation therapies (Degenholtz et al., 2008; Kresevic, 2012). In general, functional dependency increases over time, but this increase is higher for residents with physical or cognitive impairment compared to residents with other medical conditions, such as heart disease

(Banaszak-Holl et al., 2011). Risk factors for functional decline include injuries, medication side effects, pain, poor nutrition, weight loss, the use of restraints, prolonged bed rest, and the prolonged use of indwelling catheters (CMS, 2008; Colorado Foundation for Medical Care, 2007; American Health Care Association [AHCA], 2008; Bürge et al., 2013; Kolanowski et al., 2014). These factors may be mitigated by nursing care, multidisciplinary communication, and referrals for rehabilitation therapies and nutrition services (Horn et al., 2005; Rantz et al., 2012). In addition, improved physical environmental factors (e.g., chairs with arms, improved lighting) may contribute to maintaining or improving function (Bürge et al., 2013). ADL decline is also associated with substantial Medicare costs. In a study focused on a community-residing sample, 10.0% beneficiaries who declined in function accounted for more than 20.0% of hospital, outpatient, and nursing facility expenditures (Fried et al., 2001).

Evidence for Rationale

American Health Care Association (AHCA). Trends in publicly reported nursing facility quality measures. Washington (DC): American Health Care Association (AHCA); 2008.

Banaszak-Holl J, Liang J, QuiÃ±ones A, Cigolle C, Lee IC, Verbrugge LM. Trajectories of functional change among long stayers in nursing homes: does baseline impairment matter?. J Aging Health. 2011 Aug;23(5):862-82. PubMed

BÃ¼rge E, von Gunten A, Berchtold A. Factors favoring a degradation or an improvement in activities of daily living (ADL) performance among nursing home (NH) residents: a survival analysis. Arch Gerontol Geriatr. 2013 Jan-Feb;56(1):250-7. PubMed

Centers for Medicare and Medicaid Services (CMS). CMS MDS quality measure/indicator report. [internet]. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS);

Colorado Foundation for Medical Care. Development, maintenance, and implementation of nursing home quality measures. Environmental scan: review of the literature, clinical guidelines, and other sources of information pertinent to the CMS publicly reported nursing home quality measures. Englewood (CO): Colorado Foundation for Medical Care; 2007.

Degenholtz HB, Rosen J, Castle N, Mittal V, Liu D. The association between changes in health status and nursing home resident quality of life. Gerontologist. 2008 Oct;48(5):584-92. PubMed

Fried TR, Bradley EH, Williams CS, Tinetti ME. Functional disability and health care expenditures for older persons. Arch Intern Med. 2001 Nov 26;161(21):2602-7. PubMed

Horn SD, Buerhaus P, Bergstrom N, Smout RJ. RN staffing time and outcomes of long-stay nursing home residents: pressure ulcers and other adverse outcomes are less likely as RNs spend more time on direct patient care. Am J Nurs. 2005 Nov;105(11):58-70; quiz 71.

Kolanowski A, Mogle J, Fick DM, Hill N, Mulhall P, Nadler J, Colancecco E, Behrens L. Pain, delirium, and physical function in skilled nursing home patients with dementia. J Am Med Dir Assoc. 2015 Jan;16(1):37-40. PubMed

Kresevic DM. Assessment of physical function. In: Boltz M, Capezuti E, Fulmer T, Zwicker D, editor(s). Evidence-based geriatric nursing protocols for best practice. 4th ed. New York (NY): Springer Publishing Company; 2012. p. 89-103.

National Quality Forum measure information: percent of residents whose need for help with activities of daily living has increased (long stay). Washington (DC): National Quality Forum (NQF); 2014 Nov 7. 26 p.

Rantz MJ, Zwygart-Stauffacher M, Hicks L, Mehr D, Flesner M, Petroski GF, Madsen RW, Scott-Cawiezell J. Randomized multilevel intervention to improve outcomes of residents in nursing homes in need of improvement. J Am Med Dir Assoc. 2012 Jan;13(1):60-8. PubMed

Primary Health Components

Nursing home; long-stay; activities of daily living (ADLs)

Denominator Description

All long-stay residents with a selected target and prior assessment, except those with exclusions (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Long-stay residents with selected target and prior assessments that indicate the need for help with late-loss activities of daily living (ADLs) has increased when the selected assessments are compared. The four late-loss ADL items are self-performance bed mobility, self-performance transfer, self-performance eating, and self-performance toileting (see the related "Numerator Inclusions/Exclusions" field).

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Race

RTI analyses on the distribution of facility scores on this measure by race indicate that facilities with different proportions of non-white populations do not have different performance scores on this measure. In the analyses, facilities were sorted based on their percentage of non-white residents, and then divided into quartiles: Quartile 1 = 0 to 2.8% non-white (n=3,224); Quartile 2 = 2.8 to 11.7% non-white (n=3,154); Quartile 3 = 11.7 to 32.6% non-white (n=3,191), and Quartile 4 = 32.6 to 100% non-white (3,186). The percentile distributions of performance scores for facilities within these quartiles were then calculated and compared. Overall, there is very little difference in mean facility scores across quartiles, such that in Quartile 4 facilities, the group with the highest proportion of non-white residents, the mean for this quality measure was 15.2%. In comparison, 15.2% of the residents in Quartile 1 facilities, the group with the lowest proportion of non-white residents, experienced an increase in activities of daily living (ADL) dependency. Since these mean scores are virtually identical, the developer conclude that the percentage of non-white residents does not affect performance scores significantly for this measure (RTI International, 2014).

Gender

Gender also has been linked to ADL decline for older adults. In particular, women were found to have significantly lower rates of functional impairment compared to men, even when controlling for condition or illness suggesting gender disparity, which tends to disadvantage women, is not an issue for this measure (Peek et al., 1997; Yoshino et al., 2011).

Socioeconomic Status

Socioeconomic status has also been associated with ADL decline, such that lower status yields a higher risk for ADL decline (Chen et al., 2012; den Ouden et al., 2013; Fuller-Thomson & Gadalla, 2008). To examine the potential for a relationship between socioeconomic disparity and ADL decline, the developer examined the performance of this measure in facilities stratified by the proportion of residents who are Medicaid eligible, a proxy measure of low socioeconomic status. For this analysis, facilities were stratified into two groups: facilities with greater than 75% of residents who are Medicaid eligible and facilities with less than 75% of residents who were Medicaid eligible (75% of facilities have 75% or more of residents included in this measure who are Medicaid eligible). In Quarter 2 of 2014, the mean score on this measure for facilities with a higher proportion of Medicaid eligible residents was 15.5%, versus 14.9% for facilities with a smaller proportion of Medicaid eligible residents. This is a significant difference between the two groups [$F(1,15101) = 12.48$, $p = .0004$) but it represents a very small (Eta-squared = 0.000826) effect, meaning that socioeconomic status–as measured by proportion of Medicaid residents–explains less than 1/1000 in the variance in provider scores for this measure. Thus, the relationship between socioeconomic status, as stratified by the proportion of residents who are Medicaid eligible, and facility-level scores is quite weak (RTI International, 2014).

Although ADL function may decline over time, empirical evidence on the association between age and functional decline is inconclusive. In one study advanced age was not identified as a significant predictor of ADL decline (Yoshino et al., 2011). Another study found that the risk of functional decline increased with age (Stineman et al., 2013). A U-shape relationship between age and functional decline was also evident, indicating that people younger than 65 years and those older than 80 years are more likely to have ADL limitations (Stineman et al., 2014).

Evidence for Additional Information Supporting Need for the Measure

Chen B, Covinsky KE, Stijacic Cenzer I, Adler N, Williams BA. Subjective social status and functional decline in older adults. J Gen Intern Med. 2012 Jun;27(6):693-9. PubMed

den Ouden ME, Schuurmans MJ, Mueller-Schotte S, van der Schouw YT. Identification of high-risk individuals for the development of disability in activities of daily living. A ten-year follow-up study. Exp Gerontol. 2013 Apr;48(4):437-43. PubMed

Fuller-Thomson E, Gadalla T. Income inequality and limitations in activities of daily living: a multilevel analysis of the 2003 American Community Survey. Pub Health. 2008 Mar;122(3):221-8. PubMed

National Quality Forum measure information: percent of residents whose need for help with activities of daily living has increased (long stay). Washington (DC): National Quality Forum (NQF); 2014 Nov 7. 26 p.

Peek CW, Coward RT, Henretta JC, Duncan RP, Dougherty MC. Differences by race in the decline of health over time. J Gerontol B Psychol Sci Soc Sci. 1997 Nov;52(6):S336-44. PubMed

RTI International. RTI analysis of MDS 3.0 data (Quarter 2, 2014). Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2014.

Stineman MG, Streim JE, Pan Q, Kurichi JE, SchÃ¼ssler-Fiorenza Rose SM, Xie D. Activity Limitation Stages empirically derived for Activities of Daily Living (ADL) and Instrumental ADL in the U.S. Adult community-dwelling Medicare population. PM R. 2014 Nov;6(11):976-87; quiz 987. PubMed

Stineman MG, Zhang G, Kurichi JE, Zhang Z, Streim JE, Pan Q, Xie D. Prognosis for functional deterioration and functional improvement in late life among community-dwelling persons. PM R. 2013 May;5(5):360-71. PubMed

Yoshino H, Sakurai T, Hasegawa K, Yokono K. Causes of decreased activity of daily life in elderly patients who need daily living care. Geriatr Gerontol Int. 2011 Jul;11(3):297-303. PubMed

Extent of Measure Testing

A joint RAND/Harvard team engaged in a deliberate iterative process to incorporate provider and consumer input, expert consultation, scientific advances in clinical knowledge about screening and assessment, Centers for Medicare & Medicaid Services (CMS) experience, and intensive item development and testing by a national Veteran's Health Administration (VHA) consortium. This process allowed the final national testing of Minimum Data Set (MDS) 3.0 to include well-developed and tested items.

The national validation and evaluation of the MDS 3.0 included 71 community nursing homes (NHs) (3,822 residents) and 19 VHA NHs (764 residents), regionally distributed throughout the United States. The evaluation was designed to test and analyze inter-rater agreement (reliability) between gold-standard (research) nurses and between facility and gold-standard nurses, validity of key sections, response rates for interview items, anonymous feedback on changes from participating nurses, and time to complete the MDS assessment.

Analysis of the test results showed that MDS 3.0 items had either excellent or very good reliability even when comparing research nurse to facility-nurse assessment. In most instances these were higher than those seen in the past with MDS 2.0. In addition, for the cognitive, mood and behavior items, national testing included collection of independent criterion or gold-standard measures. These MDS 3.0 sections were more highly matched to criterion measures than were MDS 2.0 items.

Improvements incorporated in MDS 3.0 produced a more efficient assessment: better quality information was obtained in less time. Such gains should improve identification of resident needs and enhance resident-focused care planning. In addition, including items recognized in other care settings is likely to enhance communication among providers. These significant gains reflect the cumulative effect of changes across the tool, including use of more valid items, direct inclusion of resident reports, improved clarity of retained items, deletion of poorly performing items, form redesign, and briefer assessment periods for clinical items.

Refer to *Development & Validation of a Revised Nursing Home Assessment Tool: MDS 3.0.* for additional information.

Evidence for Extent of Measure Testing

Saliba D, Buchanan J. Development & validation of a revised nursing home assessment tool: MDS 3.0. Baltimore (MD): Quality Measurement and Health Assessment Group, Office of Clinical Standards and Quality, Centers for Medicare & Medicaid Services; 2008 Apr. 263 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Skilled Nursing Facilities/Nursing Homes

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

All ages

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Making Care Safer
Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Safety

Data Collection for the Measure

Case Finding Period

Quarterly

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Diagnostic Evaluation

Institutionalization

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
All long-stay* residents with a selected target and prior assessment, except those with exclusions

*Long-stay: An episode with cumulative days in facility (CDIF) greater than or equal to 101 days as of the end of the target period.

Exclusions

All four of the late-loss activities of daily living (ADLs) items indicate total dependence on the prior assessment, as indicated by
Bed Mobility (G0110A1) = [4, 7, 8] *and*
Transferring (G0110B1) = [4, 7, 8] *and*
Eating (G0110H1) = [4, 7, 8] *and*
Toileting (G0110I1) = [4, 7, 8]
Three of the late-loss ADLs indicate total dependence on the prior assessment, as in #1 *and* the fourth late-loss ADL indicates extensive assistance (value 3) on the prior assessment

If resident is comatose on the target assessment
Prognosis of life expectancy is less than 6 months on the target assessment
Hospice care on the target assessment
The resident is not in the numerator *and*
Bed Mobility (G0110A1) = missing [-] on the prior or target assessment, *or*
Transferring (G0110B1) = missing [-] on the prior or target assessment, *or*
Eating (G0110H1) = missing [-] on the prior or target assessment, *or*
Toileting (G0110I1) = missing [-] on the prior or target assessment

Note: Refer to the original measure documentation for details.

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Long-stay residents with selected target and prior assessments that indicate the need for help with late-loss activities of daily living (ADLs) has increased when the selected assessments are compared. The four late-loss ADL items are self-performance bed mobility, self-performance transfer, self-performance eating, and self-performance toileting.

An increase is defined as an increase in two or more coding points in one late-loss ADL item *or* one point increase in coding points in two or more late-loss ADL items.

Note: Refer to the original measure documentation for details.

Exclusions
Unspecified

Numerator Search Strategy

Institutionalization

Data Source

Administrative clinical data

Type of Health State

Functional Status

Instruments Used and/or Associated with the Measure

Center for Medicare & Medicaid Services (CMS) Minimum Data Set (MDS) - Resident Assessment Instrument (Version 3.0)

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a lower score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Percent of residents whose need for help with activities of daily living has increased (long-stay).

Measure Collection Name

Nursing Home Quality Initiative Measures

Measure Set Name

Long-stay Quality Measures

Submitter

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Developer

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

RTI International - Nonprofit Research Organization

Funding Source(s)

United States (U.S.) Government

Composition of the Group that Developed the Measure

United States (U.S.) Government Staff, Clinical Experts, Researchers, and Statisticians

Financial Disclosures/Other Potential Conflicts of Interest

No conflicts of interest exist.

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2015 Jul 7

Measure Initiative(s)

Nursing Home Compare

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Oct

Measure Maintenance

Annual and (every three years) endorsement

Date of Next Anticipated Revision

Quarter 4 2016

Measure Status

This is the current release of the measure.

This measure updates a previous version: RTI International. MDS 3.0 quality measures user's manual. v8.0. Baltimore (MD): Center for Medicare & Medicaid Services (CMS); 2013 Apr 15. 80 p.

Measure Availability

Source available from the Centers for Medicare & Medicaid Services (CMS) Web site .

For more information, refer to the CMS Web site at www.cms.gov .

Companion Documents

The following are available:

Saliba D, Buchanan J. Development & validation of a revised nursing home assessment tool: MDS 3.0. Baltimore (MD): Quality Measurement and Health Assessment Group, Office of Clinical Standards and Quality, Centers for Medicare & Medicaid Services; 2008 Apr. 263 p. Available from the Centers for Medicare & Medicaid Services (CMS) Web site .

Nursing Home Compare. [internet]. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS). 2000- [updated 2012 Nov 15]; [cited 2012 Nov 27]. This tool is available from the Medicare Web site .

NQMC Status

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This NQMC summary was updated again by ECRI Institute on May 31, 2016. The information was not verified by the measure developer.

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Production

Source(s)

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